Claims

1. Electrical circuit for providing an electrically operable connection of an external power supply and an electrical device being a motor vehicle built-in device, comprising:
   - a main input (P1) for coupling to said external power supply (PS);
   - a main output (P2) for coupling to said electrical device; and
   - a first electrical operable switch (Sw1) interconnected between said main input (P1) and said main output (P2), said first electrical operable switch (Sw1) having an open position and a closed position, said first electrical operable switch (Sw1) being conductive in said closed position and being non-conductive in said open position;

   characterized in that said circuit further comprises:
   - at least one wake-up input (I1, I2, I3) to receive a wake-up signal;
   - at least one sleep input (Pd) to receive a sleep signal; and
   - a bi-stable sub-circuit (Crbs) coupled to said main input (P1) and coupled to said first electrical operable switch (Sw1), said sub-circuit (Crbs) being connected to said at least one wake-up input (I1, I2, I3) and to said least one sleep input (Pd) such that a received wake-up signal energizes said bi-stable sub-circuit (Crbs) and a received sleep signal de-energizes said bi-stable sub-circuit (Crbs); wherein said energized bi-stable sub-circuit (Crbs) causes to close said first electrical operable switch (Sw1) and said de-energized bi-stable sub-circuit (Crbs) causes to open said first electrical operable switch (Sw1).

2. Electrical circuit according to claim 1, characterized in that said bi-stable sub-circuit (Crbs) comprises:
   - a first transistor (T1) having an emitter terminal, a collector terminal and a base terminal, wherein said first transistor (T1) is configured with a bridge resistor interconnected between its emitter terminal and its base terminal and a base resistor connected to its base terminal;
   - a second transistor (T2) having an emitter terminal, a collector terminal and a base terminal, wherein said second transistor (T2) is configured with a bridge resistor interconnected between its emitter terminal and its base terminal and a base resistor connected to its base terminal; and
   - an interposed resistor (R1);

   wherein said first transistor (T1) is coupled via its emitter terminal to said main input (P1), via its collector terminal to a first terminal of said interposed resistor (R1) and via its base resistor to said collector terminal of said second transistor (T2);
   wherein said second transistor (T2) is coupled via its emitter to ground, via its base resistor to

a second terminal of said interposed resistor (R1) and via its collector to said base resistor of said first transistor (T1);

wherein said at least one wake-up input is coupled to a first connection line between said base resistor of said first transistor (T1) and said collector terminal of said second transistor (T2), both being coupled;

wherein said at least one sleep input is coupled to a second connection line between said base resistor of said second transistor (T2) and said second terminal of said interposed resistor (R1), both being coupled; and

wherein said first electrical operable switch (Sw1) is operable with said bi-stable sub-circuit (Crbs) being coupled to said second connection line.

3. Electrical circuit according to claim 2, characterized by
   - a third transistor (T5) having an emitter terminal, a collector terminal and a base terminal, wherein said third transistor (T5) is configured with a bridge resistor interconnected between its emitter terminal and its base terminal and a base resistor connected to its base terminal;

   wherein said third transistor (T5) is interconnected in-between a connection line coupling said bi-stable sub-circuit (Crbs) and said first electrical operable switch (Sw1) such that said third transistor (T5) is coupled via its base resistor to said second connection line via its collector terminal to said first electrical operable switch (Sw1) and via its emitter terminal to ground.

4. Electrical circuit according to claim 2 or claim 3, characterized by
   - at least one wake-up transistor (T3, T3a, T3b) having an emitter terminal, a collector terminal and a base terminal, wherein said at least one wake-up transistor (T3, T3a, T3b) is configured with a bridge resistor interconnected between its emitter terminal and said its terminal and a base resistor connected to its base terminal;

   wherein said at least one wake-up transistor (T3, T3a, T3b) is interconnected in-between said at least one wake-up input (I1, I2, I3) and said bi-stable cub-circuit (Crbs) such that said at least one wake-up transistor (T3, T3a, T3b) is coupled via its base resistor to said at least one wake-up input (I1, I2, I3), via its emitter terminal to ground and via its collector terminal to said first connection line.

5. Electrical circuit according to anyone of the claims 2 to 4, characterized by
   - at least one sleep transistor (T4) having an emitter terminal, a collector terminal and a base terminal, wherein said at least one sleep transistor (T4) is configured with a bridge resistor interconnected between its emitter terminal and its base terminal and a base

resistor connected to its base terminal;

wherein said at least one sleep transistor (T4) is interconnected in-between said at least one sleep input (Pd) and said bi-stable cub-circuit (Crbs) such that said at least one sleep transistor (T4) is coupled via its base resistor to said at least one sleep input (Pd), via its emitter terminal to ground and via its collector terminal to said second connection line.

6. Electrical circuit according to anyone of the claims 2 to 5, characterized by
   - an upper voltage level check circuit (Cr1) comprising:
     - a second resistor (R2);
     - a z-diode (D1); and
     - a fourth transistor (T6) having an emitter terminal, a collector terminal and a base terminal, wherein said fourth transistor (T6) is configured with a bridge resistor interconnected between its emitter terminal and its base terminal and a base resistor connected to its base terminal;

   wherein said second resistor (R2) is coupled to a connection line between said main input (P1) and said first electrical operable switch (Sw1) and to a first terminal of said z-diode (D1);

   wherein said fourth transistor (T6) is coupled via its base resistor to a second terminal of said z-diode (D1), via its emitter terminal to ground and via its collector terminal to said second connection line; and

   wherein said z-diode is adapted to be conductive in case a voltage applied to said main input (P1) exceeds a pre-defined upper voltage level (V_{ZD1}).

7. Electrical circuit according to anyone of the claims 2 to 6, characterized by
   - a second electrical operable switch (Sw2) interconnected in-between said first electrical operable switch (Sw1) and said main output (P2); and
   - an lower voltage level check circuit (Cr2) comprising
     - a third resistor (R3);
     - a z-diode (D2); and
     - a fifth transistor (T7) having an emitter terminal, a collector terminal and a base terminal, wherein said fifth transistor (T7) is configured with a bridge resistor interconnected between said emitter terminal and said base terminal and a base resistor connected to its base terminal;

   wherein said second resistor (R3) is coupled to a connection line between said first electrical operable switch (Sw1) and said main output (P2) and to a first terminal of said z-diode (D2);

   wherein said fifth transistor (T7) is coupled via its base resistor to a second terminal of said z-diode (D2), via its emitter terminal to ground and via its collector terminal to said second

electrical operable switch (Sw2) to be operated; and
wherein said z-diode (D2) is adapted to be conductive in case a voltage applied to said main input (P1) and conducted via said first electrical operable switch (Sw1) being conductive exceeds a pre-defined lower voltage level (V_{ZD2}).

8. Electrical circuit according to claim anyone of the preceding claims, characterized in that said first electrical operable switch (Sw1) is a metal-oxide field-effect transistor (MOSFET).

9. Electrical circuit according to claim 7 or claim 8, characterized in that said second electrical operable switch (Sw1) is a metal-oxide field-effect transistor (MOSFET).

10. Electrical circuit according to anyone of the claims 2 to 9, characterized by
- a third z-diode interconnected between said second terminal of said interposed resistor (R1) and said base terminal of said second transistor (T2) within said second connection line;

wherein said z-diode is adapted to be conductive in case a voltage applied to said main input (P1) and conducted via said first transistor (T1) being conductive exceeds a pre-defined voltage level.

11. Electrical circuit according to anyone of the preceding claims, wherein said motor vehicle built-in device is a free-hand installation main device (200) for detachably connecting a mobile communication device (100) and said external power supply (PS) is an accumulator of a motor vehicle.

12. Motor vehicle built-in device being operably connected to an external power supply, comprising:
- a plurality of electrical components energized by said external power supply; and
- an electrical circuit (210) for providing an electrical operable connection of an external power supply and said motor vehicle built-in device,

characterized in that said electrical circuit (210) comprises:
- a main input (P1) for coupling to said external power supply (PS);
- a main output (P2) for coupling to said motor vehicle built-in device;
- a first electrical operable switch (Sw1) interconnected between said main input (P1) and said main output (P2), said first electrical operable switch (Sw1) having an open position and a closed position, said first electrical operable switch (Sw1) being conductive in said closed position and being non-conductive in said open position;
- at least one wake-up input (I1, I2, I3) to receive a wake-up signal;

- at least one sleep input (Pd) to receive a sleep signal; and
- a bi-stable sub-circuit (Crbs) coupled to said main input (P1) and coupled to said first electrical operable switch (Sw1), said sub-circuit (Crbs) being connected to said at least one wake-up input (I1, I2, I3) and to said least one sleep input (Pd) such that a received wake-up signal energizes said bi-stable sub-circuit (Crbs) and a received sleep signal de-energizes said bi-stable sub-circuit (Crbs); wherein said energized bi-stable sub-circuit (Crbs) causes to close said first electrical operable switch (Sw1) and said de-energized bi-stable sub-circuit (Crbs) causes to open said first electrical operable switch (Sw1).

13. Motor vehicle built-in device according to claim 12, characterized in that said electrical circuit (210) is an electrical circuit (210) according to anyone of the claims 1 to 10.

14. Motor vehicle built-in device according to claim 12 or claim13, characterized in that said motor vehicle built-in device (200) is a free hand installation main device (200) for detachably connecting a mobile communication device (100) and said external power supply is an accumulator of a motor vehicle.

15. Motor vehicle built-in device according to claim 14, further comprising:

- at least one interface for exchanging signals (211, 212, 205) between electrical units included in said motor vehicle and said motor vehicle built-in device (200), said signals (211, 212, 205) comprising said at least one wake-up signal and said at least one sleep signal;
- at least one interface for exchanging signal (201) between said motor vehicle built-in device (200) and said mobile communication device (100) connected detachably (105); and
- at least one control unit to pass signals in-between said interfaces.